

PATENT ABSTRACTS OF JAPAN

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(54) PURIFICATION OF SUGARCANE WAX

(57)Abstract:

PROBLEM TO BE SOLVED: To purify a wax derived from a sugarcane, rich in resources and excellent in production stability into a white and odorless one by dissolving a crude sugarcane wax in an organic solvent and then treating the resultant solution with active carbon.

SOLUTION: A crude sugarcane wax is dissolved in ethanol or isopropanol and the resultant solution is then treated with active carbon. Furthermore, the decoloring and deodorizing are good especially when combining the ethanol with the active carbon and the dissolution of the wax is preferably carried out by adding the ethyl alcohol, etc., to the wax and heating the resultant solution on a water bath.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the purification method of a natural wax, and relates to the purification method of the ***** wax which is a wax of the sugarcane origins especially abundant in resources.

[0002]

[Description of the Prior Art] since waxes are mainly used as an assistant, it does not make a final product spoil and, fundamentally, is [therefore] white (achromatism) it is -- and it is desirable that it is no odor For example, since the amount used is remarkably restricted in order that the so-called "*****" may arise to the color tone of a product, if the wax used for the lip stick with which a color serves as requirements, or ink is coloring, or the natural wax has the peculiar odor by becoming unusable, in fields, such as cosmetics and food, it is not used in many cases as what becomes an damage to image of a product. That is, the actual condition is that they receive a limit in a field of the invention or the amount used since natural waxes are colored and an owner smell, although it excels in use safety, and the melting point is high in a physical-properties side and the intensity and the degree of hardness are excellent, and the direction of the paraffin hydrocarbon as the alternative is used in large quantities. However, a paraffin hydrocarbon is a petroleum product, therefore since there are ***** and a point which is not [****] in respect of physical properties with a desirable thing in safety or an image, white and the odorless natural wax are demanded from various kinds of industries.

[0003] Although there are carnauba wax, beeswax, a candelilla wax, a rice wax, a montan wax, a ***** wax, ***** **, a jojoba oil, a wax, Rhus-verniciflua **, lanolin, spermaceti, etc. as a natural wax, since the ***** wax which is a wax of the sugarcane origin is excellent also in the field of a production stability also in resources, this invention sets this ***** wax as the refining object.

[0004] A rough ***** wax is the sugarcane residue which squeezed the harvested sugarcane and ****ed a part for honeydew. (usually) As food of livestock, it is used and is hardly used as a wax raw material. It considers as a raw material. It is performed as follows. [Albin H. which can be manufactured Warth Work "The Chemistry and Technology of Waxes" 2nd Edition, Reinhold Publishing Cororation, and U.S.A. issue]. That is, after fully drying a sugarcane residue, a grinding is carried out and the boiling point 95 to 105 degree C It is abbreviation to the above-mentioned grinding object about petroleum naphtha. 10 **** addition is carried out, and it boils and filters. It carries out and is a solid content. (sugarcane residue) A part for liquid (naphtha extract) It dissociates and the solid residue is obtained by subsequently carrying out distillation recovery of the naphtha from a naphtha extract. Since this residue contains the tars else [for a wax], such as a part for oil, a pitch, and a pitch, it separates these. for this reason -- being alike -- after adding, heating and melting the above-mentioned solid residue in organic solvents, such as ethanol, an isopropanol, an acetone, and butyl alcohol, first -- abbreviation Filter under the temperature condition of 75 **. ** -- a black tar is carried out a ** exception Since the amount of wax will separate if filtrate is cooled, it filters, after making it cool to ordinary temperature, and a part for a wax is ****ed. If distillation recovery of the organic solvent is carried out from a part for the obtained wax, a rough ***** wax will be obtained. In addition, most organic solvents are collected by distilling filtrate. That is, although an extraction efficiency is low, therefore the solvent extraction process is adopted as mentioned above and a ***** wax improves about the yield for a wax by this when the hot water extraction method which is a usual extraction method is used, in order that the amount of mixing of an impurity may also increase simultaneously, let it be the difficult wax of refining. The above-mentioned rough ***** wax is brown. (hue: 5YR 3/5 by JIS Z 8102, and dark ****) It is presenting and an odor is also very strong.

[0005] According to the conventional technical technique, refining of a rough ***** wax is a chlorine-based bleaching agent in using an acid and alkali **** [, and]. (for example, sodium hypochlorite) It uses or the so-called "bleaching" which performs air oxidation and ozone oxidization has carried out. [using peroxides, such as a chrome oxide and a hydrogen peroxide,]

[0006]

[Object of the Invention and the purpose of invention] the refining ***** wax obtained by bleaching processing of the conventional technique -- what ** -- yellow -- presenting -- **** -- [-- the hue according [the conventional refining ***** wax which incidentally carried out chrome-oxide processing] to JISZ 8102 -- 3Y 7 / 6] (mustard color) -- Moreover, the refining ***** wax of a thermal stability by the conventional technique is [what **] low. It is a color return phenomenon by heat treatment for 100 degrees C and 30 minutes. Since a technical problem is in the point that a field of the invention is limited in order to be generated and to become the brown which is the color tone of a rough ***** wax from yellow, and a characteristic odor cannot be removed. The field of the invention was limited further and has been especially made unusable in the field of food or cosmetics.

[0007] Therefore, it is by making as [arise / a color return phenomenon] to extend the field of the invention of a ***** wax remarkably while the purpose of this invention is abundant in resources, and refines the ***** wax excellent in the production stability and makes it to white and an odorless thing.

[0008]

[The means and operation] which solve a technical problem and attain the purpose According to this invention, while the above-mentioned technical problem is solved by the purification method of the ***** wax which is made to melt a rough ***** wax in ethanol or an isopropanol, and is characterized by subsequently processing with active carbon, the above-mentioned purpose is attained.

[0009] Actual operation of melting a rough ***** wax in the organic solvent adds the above-mentioned organic solvent in a ***** wax, for example, is performed by being on a water bath and heating. It is because it was thought that it adsorbed alternatively [the low polar substance in a rough ***** wax] to active carbon by making it melt in the alcohol which it has the low polar-substance adsorption capacity with active carbon expensive [that ethanol or an isopropanol is used as an organic solvent in this invention technique, and active carbon is adopted as an adsorbent], and is a high polar substance about a rough ***** wax. It is the combination of alcohols and active carbon and that depigmentation and deodorization are performed the best is the case where ethanol and active carbon are combined. In addition, although deodorization may become possible when alcohols, silica gel, or the activated clay is combined, the desired end cannot be attained about depigmentation.

[0010]

[Example] etc. Next, the example of an examination and an example explain this invention still in detail.

Example of an examination 1 rough (influence organic-solvent and adsorbent affect depigmentation effect)

***** wax 100g It receives. 2 The various organic solvents of a liter are added, and it is on a water bath, and abbreviation. 1 Time heating was carried out. the adsorbent of various kinds after checking that the ***** wax has fully melted -- gradually -- 100g after adding, and heating subsequently, being on a water bath again and stirring -- 50 degrees C up to -- the adsorbent was carried out the ** exception by cooling and filtering After that, elimination recovery of the organic solvent was carried out with vacuum distillation, and the refining ***** wax was obtained. Thus, the result which investigated the relation of the organic solvent and adsorbent which are exerted on the depigmentation effect by visual observation about each obtained refining wax sample is the following table. 1 It was as being shown.

[0011]

[Table 1]

溶 剤	吸 着 剤			
	活性炭	シリカゲル	活性白土	活性アルミナ
クロロホルム	×	×	×	×
ベンゼン	×	×	×	×
アセトン	×	×	×	×
エチルエーテル	×	×	×	×
エタノール	△	×	×	×
イソプロパノール	○	×	×	×
トルオール	×	×	×	×

table 1 setting -- O : It was able to decolorize. ** : depigmentation -- **** -- it became thin yellow (it applies to "it has decolorized") x : It is not decolorized.

[0012] Example rough ***** wax 100g It receives. 1.5 Liter 99.5% An ethanol solution is added, and it is on a water bath, and is abbreviation. 1 Time heating was carried out. after checking that the ***** wax has fully melted -- powder active carbon 50g While it adds gradually, and it is on a water bath again and stirring subsequently 30 after heating between parts -- 50 degrees C up to -- active carbon was carried out the ** exception by cooling and filtering Since ethanol is contained, elimination recovery of this solvent is carried out with vacuum distillation, and the obtained wax solution is a refining ***** wax. (88g) It obtained. The odor of this refining ***** wax was close to no odor.

[0013] Example of an examination The result which made the sample each ***** wax refined by technique given in the rough ***** wax which is 2 raw materials (physical properties of a ***** wax), the ***** wax refined by the conventional method, and the above-mentioned example, and investigated physical properties is the following table. 2 It was as being shown.

[0014]

[Table 2]

試験項目	試 料		
	対照 1	対照 2	実施例
融点 (℃)	72	74	75
酸価	47	134	3
鹼化価	148	150	55
沃素価	40	0.3	6.5
硬度 (a)	6	7	2
比重 (b)	0.972	0.977	0.965
色相 (c)	茶	黄	薄黄

Table 2 It is under setting. Contrast 1 : Rough sugar ***** used as a raw material in each example **, () Contrast 2 : Refining ***** wax by the conventional technique [chrome-oxide processing] Elegance (a) : JIS K2235 Penetration to depend (measurement temperature is 25 degree C) (b) : Measurement temperature 20 degrees C, (c) : About a hue, the following passage Tea ; JIS Z 8102 and 5YR 3/5 (dark ****), Yellow ; JIS Z 8102 and 3Y 7/6 (mustard color) Thin yellow ; JIS Z 8102 and 5Y 9/3 (**** thin yellow).

[0015] In addition, refining ***** wax by the conventional technique (contrast 2) And refining ***** wax by this invention technique (example) It considers as a subject sample. Each sample is heated and dissolved and it is 100 degrees C. It sets. 30 The place, contrast which were held between parts 2 It discolors and a sample is a sheep.

Rough ***** wax of processing (contrast 1) Although it became the hue and the same hue Stain does not arise about each sample by the example, and stain did not accept after the cold.

[0016]

[Effect of the Invention] Although the safety to a human body is highly excellent in the physical-properties side, since natural waxes are colored and an owner smell Moreover, in order for depigmentation and deodorization to take a cost, a limit may be received in use intended use or the amount used. Especially, although it has a ***** additional advantage when the ***** wax is abundant in resources and the productivity is stable, since it is using the sugarcane as the raw material, since it is colored and an owner smell moreover -- if it processes with an adsorbent after making it melt in purification-method ***** of this invention, and the organic solvent, although the remarkable limit has been received in use intended use or the amount used in the purification method by the conventional technique in order that a thermal stability may be low and a color return phenomenon may arise -- ***** -- depigmentation and deodorization can be simultaneously attained by simple operation In addition, since it is enabled to use to ** in the food field and cosmetics field which the ***** wax refined materials obtained by processing by this invention technique are white and no odor, therefore an idea did not attain to conventionally as a field of the invention of a ***** wax, either and a thermal stability does not produce a color return phenomenon highly, it is enabled to use also in the field for which heat treatment is needed.

[Translation done.]